

# CAPTURING THE SPIRIT OF KNOWLEDGE MANAGEMENT

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## Abstract

*The ability to define knowledge management in terms of an organization's own needs and goals is critical to implementing a successful knowledge management (KM) initiative. As our understanding of what KM means to us matures, we can then identify the requirements we need to meet, structure to attain, and activities to select that will best allow us to share and transfer knowledge across the organization or discipline. The key becomes creating a system within the cultural context of an organization that delivers measurable improvements to that organization's processes, perceptions, and profits.*

As we emerge from the information age, we move to an era where knowledge is required to do our tasks—knowledge about what we do, how to do it, and where to find the experts that will enable us to make better decisions. Such knowledge resides within organizations and within the minds of knowledge workers. The aspects to managing that knowledge—that corporate or organizational memory—involve generating, organizing, developing, and distributing information to individuals so they can act upon it. The application of these actions is called knowledge management.

## Scoping KM for the Real World

How we define knowledge is essential to our understanding of how we manage it. Tom Davenport, one of the leaders in the field of knowledge management, believes:

*Knowledge is a fluid mix of framed experience, values, contextual information, and expert insight that provides a framework for evaluating and incorporating new experiences and information. It originates and is applied in the minds of knowers. In organizations, it often becomes embedded not only in documents or repositories, but also in organizational routines, processes, and norms.<sup>1</sup>*

So, if knowledge is captured within the people and processes of an organization, how do we manage it? The first step is to understand that knowledge begins its life as data. One can envision knowledge at the top of a pyramid (Figure 1). The further up the pyramid one travels, the more human analysis is required to change the data to information and then to knowledge, and the more value is potentially added to the customer or end user.

Other researchers and practitioners have focused on customer access to accurate, useful, and timely information. In essence, knowledge management is

*Getting the right information to the right people at the right time, and helping people create knowledge and share and act upon information in ways that will measurably improve the performance of the organization and its partners*

Since knowledge management has been used so frequently in today's marketplace, the term has been diluted to the point of gibberish. By using the definition above, we can begin to focus on how knowledge management can be applied to leverage specific, concrete benefits for an organization.

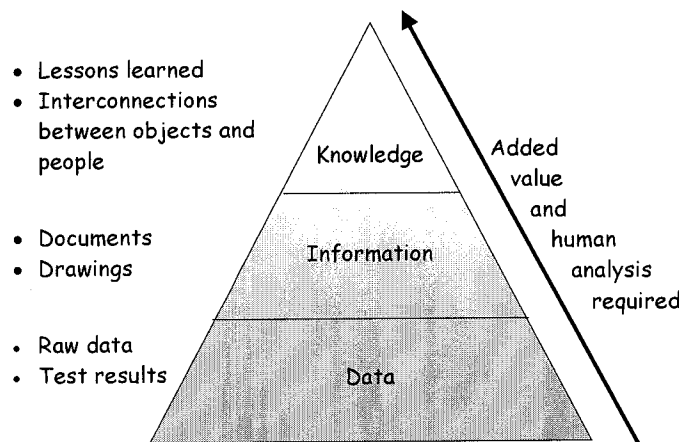


FIGURE 1. THE KNOWLEDGE PYRAMID

### KM Helps Solve Traditional Organizational Issues

The benefits of knowledge management (KM) can be difficult to measure. Anecdotal information abounds in organizations that have implemented knowledge management initiatives as to how KM was supportive in accomplishing many of their objectives. Part of the true measure of knowledge management as a successful tool is to take some of these anecdotes and start to apply clear and meaningful metrics to KM tools and techniques. Some of the business objectives that are tackled by KM strategies include how to

- Create a culture in which it was more important to think of the company's long-term needs rather than of the short-term task
- Stimulate knowledge growth and creation, for example, by improving collaborative environments and research support
- Avoid knowledge loss by compensating for the dilution or loss of experts
- Capture competitive advantages
- Find crucial information
- Save money in patent and information management
- Improve efficiency by speeding up core processes or freeing up workers time for content production
- Avoid costs and consequences of relearning lessons
- Recognize and reward knowledge sharing and reuse

However, not all organizations can invest the attention, time, and money needed to successfully implement knowledge management, and, truthfully, not all companies will receive a positive return on investment for their trouble if they do.

What knowledge management *can* clearly do for an organization is provide faster, easier access to information already owned or maintained by that company. That information—more accurate, timely, and consistent than the information today—can lead to better decisions from the executive suite to the factory floor. Within an academic discipline, knowledge management practices can connect researchers more quickly, streamline research time, and bring together previously disparate schools of thought.

Clearly, large savings in time and money have been attributed to knowledge management by simply eliminating non-value-added steps as the power of interconnectivity is brought to bear on traditionally stove-piped processes. Knowledge management also helps to capture intellectual capital for easy reuse and helps to preserve documented successes for future corporate capitalization. However, the most fundamental change wrought by knowledge management is cultural—focusing people on addressing critical problems *together*, rather than hoarding knowledge *individually*.

## The Real Rewards Come From Innovation and Reuse

All well and good, but how have organizations and individuals been utilizing KM systems and solutions to resolve key problems? Knowledge reuse occurs when *one individual adapts or adopts information that was previously created by another individual*. The transfer of information can occur in a straight line (as one person talking to another) or in a circuitous route through physical, electronic, or human intermediaries (such as through an online system referenced by a person). Reuse can be simple or complex, as illustrated in the examples that follow:

- A financial analyst might create certain algorithms that analyze transactional data within a data warehouse to understand patterns in consumer buying. Another financial analyst could reuse that algorithm (and its attendant search agents) to get similar results. If the two financial analysts were able to talk, then the second might also be able to reuse the tacit knowledge of the first in understanding the emergent patterns.
- A production-line brake specialist at the Ford Motor Company (Hammer, 1999)<sup>2</sup> plant in Atlanta creates, implements, measures, and documents a faster technique for installing brakes on a Ford truck. He uploads the practice to the Ford best-practices database. The next day, a worker on the Chicago production line tries the new technique and cuts his time for brake installation to 10 seconds.
- Astra-Merck introduced a new drug for diabetes and significantly cut down the time for the FDA approval (Dixon, 2000).<sup>3</sup> Another team at Astra-Merck is working to reuse the same process information to cut down their FDA approval time.
- The World Bank's Thematic Groups share practical information amongst local governments in rural areas (Shneier and Chavez, 2000)<sup>4</sup>. A recent survey showed that 68% of the group members are satisfied with the learning and knowledge-sharing activities that occur via this collaborative environment. A recent success involved rural Mexican villages reusing a best practice for solid waste management.

In all cases of reuse, the knowledge sharer must somehow make their information available (over a web site, through a discussion group, or at a meeting) and the knowledge receiver must be able to *access* that information, *understand* it, and *apply* it to their own situation.

## Motivating People to Share and Reuse Knowledge

Getting people to share and reuse information is difficult at best. The pace of life is fast, people feel overloaded and overwhelmed, and it simply takes longer to make an information object reusable by someone else than it does to publish it for your own purposes: "A new way of thinking, a new approach to rewarding employees on the basis of their contribution to the firm's knowledge and not just performance, needs to be put into place."<sup>5</sup> There are three basic theories here: (1) appeal to people's nature to "do the right thing" and share across the organization or discipline; (2) create an environment that is infectious in getting people to share; and/or (3) explicitly reward people to share. In reality, organizations should look at some combination of the three methods. Some of the approaches tried so far are:

- **Organize around people's passions.** If, as in the World Bank example above, people can share information around a subject they are interested in and passionate about, they are more likely to reuse it (Majchrzak, et al., 2000).<sup>6</sup>
- **Supporting the core mission.** One organizational study at NASA's Jet Propulsion Laboratory looked specifically at knowledge reuse and found that a strong motivation was the ability to more effectively complete the individual's (and their team's) primary mission (Neece, 2000).<sup>7</sup> In evaluating new technologies to support a complex endeavor, individual's were motivated by pre-existing organizational structures and the need to complete the task to look at knowledge reuse. One study participant noted, knowledge reuse "is essential. (It is) the difference between being able to do the projects and not being able to do them."
- **Funding and priorities must support reuse.** To let people know an organization is serious about sharing, transferring, and reusing knowledge, the funding must be in place to allow people time (both by paying them and by re-setting priorities) to publish and share information.
- **Mentoring.** One of the best ways of transferring knowledge and ensuring that it is reused is through the age-old art of mentoring. From the days of apprenticeship, mentors can show by example and exemplar how to apply techniques, tools, methods, processes, and practices to day-to-day problems. However, mentors and protégés need to be nurtured and supported by the institution to allow such knowledge transfer to occur.
- **Monetary rewards.** At Gemini consulting and Ernst and Young, annual employee evaluations note the number of presentations or information proactively shared with others outside an immediate project team. End-of-year bonuses and raises are based partly on explicit instances of knowledge sharing (von Krogh, Ichijo, and Nonaka, 2000).<sup>8</sup> In

addition to money, some organizations provide educational opportunities, such as scholarships, courses, travel, and conferences—knowing full well that the best knowledge sharers are often the best learners. Allow those people time to learn more and they will share more with others in the organization.

- **Recognition.** One of the less-expensive options, but one of the most effective, public recognition of the excellent work by knowledge sharers and knowledge reusers can go a long way. The Ford brake installers mentioned earlier are recognized as the “best” in Ford and publicly recognized by Ford senior management. When opportunities for further learning or promotion come up, these knowledge sharers are given new opportunities.

None of these methods works in all cases, and not all methods work in each organization. It is a challenge to discover what will motivate people in a specific culture to share and to reuse.

### Measuring the Success of an Implementation

So, understanding knowledge management and how an organization can benefit from it, doesn’t inherently allow us to either implement KM or measure the success of that implementation. The value attached to a knowledge object can be determined by the value of the actions of those who use the knowledge object. Just the existence of that object is of no value if it does not change an employee’s or customer’s behavior. One of the failings of many KM systems is that they focus on capturing as much information as possible, and do not attempt to filter, segment, or distribute the information appropriately. This simply leads to information overload for the users. Ragowsky, Ahituv, and Neumann (1996, p. 89) confirm that assertion by noting

The benefit an organization gains from using a computerized application increases as a function of the increase of...the level of complexity and uncertainty...and the impact of the decision...on the organization’s objectives

To change their behavior, employees need to have *access* to the object, willingness to find and *understand* the information, and the motivation to *apply* that information to making a decision that improves the success of the business.

Approaches to justifying the cost of KM implementation fall into two camps. The first devolves a KM initiative into its components and analyzes those independently to access the project’s viability by looking at the return on investment (ROI) for, say, data warehousing or a decision support system. The second approach looks at the entire KM system and gives a strictly qualitative argument for implementing KM—who can argue that sharing knowledge is a bad idea? The limits to these two approaches are that in the first case, it is difficult to get funding for the “glue” (such as standards, metadirectories, and navigability between elements) that unifies KM subsystems; in the second case, the project can be underfunded because the true benefits are not specified and quantified.

Several authors have attempted to look more rigorously at this. One method that originally garnered a great deal of support was a “balanced scorecard”, which maintains “a balance between long-term and short-term objectives, financial and nonfinancial measures, lagging and leading indicators, and between internal and external perspectives” (Kaplan and Norton, 1996). Tiwana (2000), for example, notes that the three primary ways of identifying meaningful metrics are benchmarking, the House of Quality, and a balanced scorecard. This is also supported by earlier work from McGee and Prusak (1993) that describes several case studies measuring either operational or financial measures. McGee and Prusak conclude that the best measurements are ones that combine multiple dimensions and “balance” the result (p. 188).

Most of the economic analyses techniques ignore the role of the user in the system. It is very difficult to predict the behavior of human beings within the boundaries of an information system—even harder these days to define the system’s boundaries themselves! Nonetheless, the system is not valuable by itself, but only by the way in which the organization can use it. Consider that a user could synergistically combine information within a web-enabled, decision-support system with information from another system in order to reach a decision. The information within either system might be considered part of the data “junkyard” by that system’s developers, but when combined in unexpected ways with unanticipated uses, the “valueless” information transforms into empowering knowledge.

### Bringing Information to Bear on Solutions

To successfully implement a KM solution, we must first understand what KM means to our organization or discipline. The most successful solutions work within the culture to encourage innovation through judicious reuse, maintain an organizational memory through effective mentoring and sharing, and spur collaboration through integration of distributed information systems and drawing together remote users. Creating an architectural approach to gathering user requirements,

defining and selecting the appropriate solutions for meeting those requirements, and successfully operating those solutions is the essence of KM implementation.

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